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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/670,904

09/25/2003

Rami Zecharia

AZA-003-1P

6041

293 7590 04/23/2007  
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EXAMINER

SONI, KETAN S

ART UNIT

PAPER NUMBER

2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/23/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/670,904

**Applicant(s)**

ZECHARIA ET AL.

**Examiner**

Ketan Soni

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 9/25/03.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/25/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Priority***

Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) and under 35 U.S.C. 120 is acknowledged.

***Preliminary Amendment***

The present Office Action is based upon the original patent application filed on 09/25/2003 as modified by the preliminary amendment also filed on 09/25/2003.

**Claims 1 and 2** are now pending in the present application.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the Examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Metzger et al. (US6829248 B1)** in view of **Dharanikota (US 6914883 B2)**.

Consider **claim: 1**, Metzger et al. discloses an apparatus for managing a plurality of flows of network information (a communication system for communication of data packet or cells associated with a packet or cell switched network. The system includes a plurality of ports and a switching segmentation and reassembly device, column: 2, lines: 52-56), each flow being identified by a flow identifier (FID) (At a step 202, a data cell or packet is received by reassembly block 14 (FIG. 3) from physical device 20 or 25. After step 202, a step 204 is performed where reassembly block 14 performs a lookup to assign (and identify the type of data such as data cell or packets) the data cell or

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packet received to a connection identifier, column: 6&7, lines: 65-67 & 1-3), the flows passing out of the apparatus via a plurality of output ports, each flow being stored as one or more cells, each cell being stored in a buffer, each buffer being identified by a buffer identifier (BID) (A connection identifier and other data cell information are written to the buffer descriptor. Reassembly block 14 writes a buffer descriptor pointer directly to transmit queue 74, column: 6, lines: 46-51), the apparatus comprising:

a shaper, the shaper shaping a subset of the plurality of flows and outputting a plurality of FIDs, each FID output by the shaper representing a cell of a FID shaped by the shaper (Operating as a traffic shaper, apparatus 10 is inserted between a transmitter and receiver in an ATM network in order to shape traffic from the transmitter to receiver. Traffic shaping provides for the communication by one device of a variety of different ATM service categories, including Constant Bit Rate (CBR), Variable Bit Rate (VBR) (both single and dual leaky bucket), Unspecified Bit Rate (UBR), Guaranteed Frame Rate (GFR), and Available Bit Rate (ABR). Apparatus 10 automatically schedules each connection according to user assigned parameters, column: 8, lines: 4-10);

a scheduler that selects one of a plurality of classes, each class being a class of a plurality of flows, a plurality of such classes being associated with each output port, the scheduler selecting one of the flows in a class associated with the selected output port, the scheduler outputting an FID that identifies the one selected flow, the FID output by

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the scheduler representing a cell of a FID scheduled by the scheduler (Apparatus 10 includes a scheduler such as the scheduler disclosed in U.S. Application Ser. No. 09/044,384, entitled "Apparatus and Method for Scheduling Multiple and Simultaneous Traffic in a Communication System," invented by Gemar and Andrews, incorporated herein by reference. Exemplary scheduling functions can be performed by RS8234 service segmentation and reassembly controller, manufactured by Conexant Systems, Inc, column: 8, lines: 12-21; After step 214, a step 215 is performed where schedule block 15 decides which connection (corresponding selected port for outputting the queue or flow) will send the next data cell or packet. After step 215, a step 216 is performed where segmentation block 16 modifies the header belonging to the data cell or packet of this connection, column: 7, lines: 42-46; At step 219, complete transmission of all data cells of a packet is determined. Once the transmission is complete, a step 220 is performed. If the destination port transmits data packets, packets are transmitted in a step 218A and step 220 is performed. processor 22 writes buffer descriptors corresponding to the buffers to transmit queue 74 column: 7, lines: 38-39); except a port calendar, the port calendar identifying for servicing one of a plurality of output ports, and a dequeue mechanism that retrieves a BID in response to receiving an FID, wherein if the shaper outputs a FID associated with the output port selected by the port calendar then the dequeue mechanism retrieves a BID associated with the FID output by the shaper, and wherein if the shaper does not output an FID associated with the selected output port and if the scheduler outputs a FID associated with the selected output port then the dequeue mechanism retrieves a BID associated with the FID output by the

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scheduler, wherein the port calendar, shaper, scheduler and dequeue mechanism are all part of a single integrated circuit.

In the same field of endeavor, Dharanikota discloses a port calendar, the port calendar identifying for servicing one of a plurality of output ports (Depending (after recognizing the type of frame format) upon frame format, L2 encapsulation corresponding to a target port is added to the IP packet and the frame is enqueued in a flow queue of the egress scheduler (reference numeral 322). At the time the frame is eligible for transmission, it is read from the egress data buffer and transmitted on an external link output interface, column: 8, lines: 22-27);

a dequeue mechanism (Buffer queues (and dequeues for egress side of the network) on the ingress and egress sides of the network element, which are established for supporting traffic flows on individual VIEPs (Virtual Ingress Egress Pipes) Column: 2, lines: 65-67) that retrieves a BID in response to receiving an FID (L2 encapsulation corresponding to a target port is added to the IP packet and the frame is enqueued in a flow queue of the egress scheduler (reference numeral 322). At the time the frame is eligible for transmission, it is read from the egress data buffer and transmitted on an external link interface, column: 8, lines: 22-26; A buffer acceptance and flow control module is associated with each of the ingress and egress cards that operates to manage the traffic flows associated with the VIEPs through the switch fabric, column: 3, lines: 6-9), wherein if the shaper outputs a FID associated with the output port selected

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by the port calendar then the dequeue mechanism retrieves a BID associated with the FID output by the shaper (A traffic shaping and scheduling module is operable with an aggregate-level monitoring module disposed on the egress cards for scheduling and shaping outgoing traffic on the outgoing communications links to the network element's neighboring nodes in the network, column: 3, lines: 13-18), and wherein if the shaper does not output an FID associated with the selected output port and if the scheduler outputs a FID associated with the selected output port then the dequeue mechanism retrieves a BID associated with the FID output by the scheduler (Feedback flow control (also capable of identifying flow of queue) is provided between the ingress and egress sides for throttling buffer acceptance and packet discarding based on buffer congestion thresholds established on the egress side, column: 3, lines: 18-21), wherein the port calendar, shaper, scheduler and dequeue mechanism are all part of a single integrated circuit.

Therefore it would have been obvious to a person with ordinary skill in the art at the time the invention was made to incorporate a communication system for communication of data packets or cells associated with a packet or cell switched network and the system includes a plurality of ports and a switching segmentation and reassembly device, which further capable for routing data packets or cells to and from the ports and the at least one destination as disclosed by Metzger et al. with the monitoring solution disclosed by Dharanikota for routing element of an autonomous network by shaping, scheduling and buffering for enhancing routing capability in a more efficient manner.

Consider **claim: 2**, and as applied to Claim 1, Metzger et al. as modified by Dharanikota discloses that the apparatus is configurable so that a single flow is both shaped by the shaper and is also scheduled by the scheduler (A QoS-aware traffic shaper/scheduler 508 is operable in association with the flow controller 510 on the egress TLK 202B for appropriately loading the outgoing links in accordance with QoS-based policies and constraints, column: 10, lines: 34-38).

### **Conclusion**

The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

- Kao et al. (U.S. Patent # US 6535513 B1) discloses: Multimedia and multirate switching method and apparatus
- Giroux et al. (U.S. Patent # US 7023866 B2) discloses: Fair queue servicing using dynamic weights (DWFQ)
- Wilford et al. (U.S. Patent # 6687247 B1) discloses: Architecture for high speed class of service enabled **LINECARD**.

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Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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P.O. Box 1450  
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**Hand-delivered responses** should be brought to:

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ketan Soni whose telephone number is (571) 270-1782.

The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rafael Pérez-Gutiérrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028. If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Ketan Soni

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April 10, 2007

  
RAFAEL PEREZ-GUTIERREZ  
SUPERVISORY PATENT EXAMINER

4/13/07